



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,411	06/30/2003	Byung-sun Choi	Q73220	8067

23373 7590 07/21/2006
SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

VO, TUNG T

ART UNIT PAPER NUMBER

2621

DATE MAILED: 07/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/608,411	CHOI, BYUNG-SUN	
	Examiner	Art Unit	
	Tung Vo	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 7, 9, 10, 12-14, 17-19, 22-24, 26, 27, 29, 30 and 32-45 is/are rejected.
- 7) ☒ Claim(s) 5, 8, 11, 15, 16, 20, 21, 25, 28 and 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/30/2006 has been entered.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 34-35 are rejected under 35 U.S.C. 101 because a computer readable medium having embodied thereon a computer program for a bit-allocation method needs to be executed by a computer in order to performing the program.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 2621

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 3-4, 6-7, 9-10, 12-14, 17-19, 22-24, 26-27, 29-30, and 32-45 are rejected under 35 U.S.C. 102(e) as being anticipated by Tajime (US 6,915,018)

Re claims 1, 9, 12, 17, 22, 29, 32-34, Tajime discloses a transcoding apparatus (figs. 1 and 10) comprising: a video decoding unit (11 of fig. 1) which receives compressed bitstream and performs decoding thereof to output decoded pictures;

a complexity estimation unit (101 of fig. 1) which estimates complexity of a current picture among the decoded pictures to encode the current picture;

a target bit-allocation unit (102 and 104 of fig. 1) which performs desired bit-allocation using the complexity information of the current picture;

a bit-rate control unit (104 of fig. 1) which controls bit-rate using bit-allocation information (102 of fig. 1) and state information from memory, which outputs an encoded bitstream (13 of fig. 1); and

a video encoding unit (13 of fig. 1) which encodes the decoded pictures on the basis of the bit-allocation and state information of the bit-rate control unit.

Re claim 3, 10, 13, 18, 23, 30, Tajime further discloses wherein the compressed bitstream input to the video decoding unit is compressed in MPEG (Motion Picture Experts Group) format (col. 1).

Re claims 4, 14, 19, 24, 35, Tajime further discloses wherein the complexity estimation unit (101 of fig. 1) calculates complexity of a picture to be currently encoded, using complexity of decoded previous and current pictures output from the video decoding unit (I, P, B of MPEG

Art Unit: 2621

standard) and complexity of an encoded previous picture output from the video encoding unit (col. 1, lines 11-18, 45-67).

Re claims 6, 26, 36, Tajime further discloses wherein the bit-allocation unit (102 and 103 of fig. 1) increases a number of bits to be allocated for the current picture if complexity of an estimated current picture is large, and decreases number of bits to be allocated for the current picture if the complexity of the estimated current picture is small (col. 8, lines 19-38).

Re claims 7 and 27, Tajime further discloses wherein the target bit-allocation unit (104 of fig. 1) calculates a number of bits to be allocated for the current picture using the complexity of the current picture (col. 8, lines 39-44).

Re claims 37-45, Tajime further discloses wherein the complexity estimation unit estimates the complexity of the current picture based on a product of a complexity of a decoded current picture and a ratio of a complexity of an encoded previous picture of the current picture to a complexity of a decoded previous picture of the current picture (col. 9, lines 1-col. 10, line 21).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tajime (US 6,915,018) in view of Kim (2002/0126752).

Art Unit: 2621

Re claim 2, Tajime does not particularly disclose an output buffer which stores and outputs pictures encoded by the video encoding unit, wherein state information of the output buffer is provided to the bit-rate control unit as claimed.

However, Kim teaches the well known output buffer which stores and outputs pictures encoded by the video encoding unit, wherein state information of the output buffer is provided to the bit-rate control unit (40 of fig. 3).

Therefore, taking the teachings of Tajime and Kim as a whole, it would have been obvious to one of ordinary skill in the art to modify the output buffer (40 of fig. 3) of Kim into the transcoding system of Tajime for the same purpose of buffering the encoded video stream to the target bit rate controller and transmitting the encoded video stream storage or the further processing. Doing so would allow the system control overflow and underflow encoded data during encoding.

Allowable Subject Matter

8. Claims 5, 8, 11, 15, 16, 20, 21, 25, 28, 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Liu (US 5,907,374) discloses a method and apparatus for processing a compressed input bitstream representing an information signal.

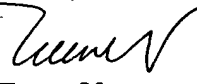
Art Unit: 2621

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung Vo whose telephone number is 571-272-7340. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on 571-272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Tung Vo
Primary Examiner
Art Unit 2621